Furniture in Swedish Nursing Homes: A Design Perspective on Perceived Meanings within the Physical Environment

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ABSTRACT

There are good reasons to believe that furniture designers can play an important role in the design of appropriate caring environments and thus contribute to the care that is provided. Designers are usually engaged by manufacturers that develop furniture for public procurement and a market for elderly consumers but often do not learn from those who spend their everyday lives in these environments. This paper is based on industrial design and presents a study that explores the relationships between people and furniture in nursing homes. Thematic interviews were carried out with residents and personnel, in total 21 participants. The study was carried out in three nursing homes in Stockholm. The results suggest that elderly people strive for a sense of home in their private rooms in contrast to shared rooms and that the perspectives on furniture differ between the elderly people and the personnel. The conclusion is that understanding the role of furniture at nursing homes can help to reinforce the identity of elderly residents and their needs of continuity, socialization and existential safety. The recommendations are to involve the experiences of elderly people in the design processes and to make more informed furniture investment decisions for nursing homes.

Introduction

This paper is based on industrial design and the understanding that people’s needs and human–product relationships constitute important points of departure in all design work. The paper explores relationships between people and furniture in nursing homes in northern Stockholm, the capital of Sweden. The study involves personnel at the nursing homes as well as the residents themselves. The term nursing home is used in its actual meaning, namely as an accommodation for elderly people entitled to assistance under the Social Services Act, that defines a facility offering service, personal care, and home care around the clock. The term nursing home is replaced in Sweden with the term “residential care facility” or “health and care homes” as was suggested in a governmental investigation (Statens offentliga utredningar [Swedish Government Official Reports], 2008). In 2012, about 87,600 persons, or 5%, of all people aged 65 and above and 14% of all people aged 80 and above in Sweden lived in nursing homes (The National Board of Health and Welfare, 2012). There are different approaches to increase the understanding of how the physical environment affects elderly people in nursing homes (Caspari, 2004; Eshelman & Evans, 2002; Radley & Taylor, 2003; Rowles, 2006; Ulrich, 1991; Wahl & Oswald, 2010; Zavotka & Teaford, 1997). Supportive care environments can ease psychological stress and positively affect healing and well-being (Evans & McCoy, 1998; Ulrich, 1991). People associate “the clinicalness of the ward” and presence of medical technology such as intravenous “drips” with not feeling well and prefer objects and spaces associated with everyday life such as personal possessions, flowers, and those spaces enabling a view from a window (Radley & Taylor, 2003). Shared spaces that give the impression of being professional help people to develop confidence in the way the nursing home provides health care (Peck, 2004). The choice of furniture, its style and color scheme, can successfully improve the adjustment of old people to nursing homes (Zavotka & Teaford, 1997). The eating environment is one factor that affects appetite (Wikby & Fägerskiöld,
Industrial design and the understanding that people’s needs and human-product relationships constitute important points of departure in all design work.

Aesthetics surroundings can both relieve suffering or potentially intensify it (Caspari, 2004). Thus, it is beyond doubt that people’s experiences of nursing home care are inseparable from the environment and their situation (Rasmussen, Jansson, & Norberg, 2000). Design can serve eldercare outcomes. To accomplish this, it is important to have an understanding of how relationships between people and the physical environment including the furniture it contains affect people’s behavior, thoughts, and feelings, and support them and enhance their eldercare experience.

In the twentieth century, sociopolitical reforms reoriented the type of architecture used in nursing homes from institutional to homelike environments (Andersson, 2011). According to Lundgren (2000), the aesthetics and ideology of being homelike has maintained an outdated and stereotypic notion of elderly people. This is because it is not based on their own experiences, but is a result of interpretations made by caregivers, politicians, facility managers, architects, interior designers, and others who work with older adults. In general, there has been a shift in notions about homelike environments from product-related factors to context-related factors. For example, Falk, Wijk, Persson, and Falk (2012) write that attachment to place is an important key to create a sense of home and maintaining self-identity in the process of moving to a nursing home. They understand the concept of place-attachment as bonding people to place, involving emotions, cognition, knowledge, beliefs, behaviors, and actions. Their conclusions are that the circumstances under which attachment is created ought to be enhanced and those processes ought to be prioritized due to the frail and vulnerable state of most nursing home residents. Eshelman and Evans (2002) state that interiors should support expressions of the individuality of each resident because disruption in attachment to place can adversely affect people’s emotional well-being. Neuroscience has shown that elderly people’s skills and abilities can be accessed through design to improve each individual’s sense of self (Zeisel, 2013). For example, recognized places or familiar objects make people know where they are; environments communicating what is appropriate behavior in that place makes the person more likely to behave appropriately; an invitation to use personal furniture perceived as meaningful in one’s own room gives residents and visitors at nursing homes a sense of the person as a whole person. Appropriate sensory stimulation (i.e., colors, sounds, smells, and textures) coherent to all the senses at once can make residents feel comfortable (Zeisel, 2013). In their ordinary homes, people generally have greater control over their lives when it comes to expressing their individuality, defining some space as personal and being private or alone with family and friends (Calkins, 1995). The process of “home-making”, the step-by-step progress that transforms a house (or space) into a home (or place) “involves a repetitive pattern of use of interior space as a rhythm and routine of daily activity is established” (Rowles, 2006, p. 28). A distinction between a space and a place is made by de Certeau (1984). Space exists when vectors of direction, velocities, and time variables are taken into consideration. Place delimits a space because it is an instantaneous configuration of positions and indicates stability. It is the partition of space that structures place. But, there is no strict opposition, it is a dynamic relationship. Space can be conceptualized as an objective identifiable context that has social consequences and qualities and place as a complex, symbolic, and cultural construction that possess individually or collectively determined meanings, attachments, and identity (Andrews & Shaw, 2008; Falk et al., 2012). Place and the objects it contains have a profound impact on people’s sense of self, and of who they are and feel able to be (Edvardsson, 2005). Material artifacts matter in the “home-making” process, not as visual elements, but because they enable daily activities (Pallasmaa, 1996). The installation and arrangement of furniture affects a sense of environmental mastery (Rowles, 2006). In the process of moving, many elderly people report that it is their possessions that transform the house into a home (Marcoux, 2001). The interior products we fill our homes with make a deeper impact on us than we think (de Botton, 2006). Against this background, questions arise as to what extent nursing home environments are perceived as a home.
Elderly people moving into nursing homes can ‘carry’ some of their homes with them as memories, habits, and feelings of safety, not least of which is a lifelong history of using furniture.

from the perspective of older people. Does it differ from the perspectives of the personnel? Are there any differences between shared and private spaces?

The Notions of Homes and Furniture in the Elderly

In general, a home is associated with something different from hospitals or care environments as sterile and depersonalized (Edvardsson, Sandman, & Rasmussen, 2005). According to Zavotka and Teaford (1997), the residents’ emotional well-being is enhanced by physical environments that provide similar perceptions as their previous homes. People with dementia exhibit less anxiety, agitation, aggression, and apathy the more they feel at home (Zeisel, 2013). Rooms shared are perceived as personal and more time is spent there if the level of furnishing formality is similar to the previous home (Zavotka & Teaford, 1997). However, the notion of home is more than a collection of material artifacts or functions installed for specific practical purposes. It is complex because it becomes a symbol of the self, a place where we express our identities and where we feel at home, meaning that we can relax in a way that is difficult in most other places (Cooper, 1974; Leath, 2006). It is a place with traces of familiar objects, perhaps a part of our family heritage or life history. In that sense, elderly people moving into nursing homes can “carry” some of their homes with them as memories, habits, and feelings of safety, not least of which is a lifelong history of using furniture.

As people age, relations to furniture may change and become more important for a wide range of reasons. First, many elderly people spend increased time at home (Baltes, Maas, Wilms, Borchelt, & Little, 1999) and feel that freedom of movement is restricted, which is particularly true when moving to a nursing home. As a consequence, elderly people “may objectively reduce their action range and subjectively re-evaluate their interior spaces as more valuable in contrast to the outdoor environment which is no longer accessible to them” (Wahl & Oswald, 2010, p. 116). Second, furniture is valuable for one’s sense of being at home, supporting a sense of safety and security. “Being ‘at home’ is inherently, and by definition, a positive experiential state” (Rowles, 2006, p. 27). Furniture and other possessions are often considered to be at the heart of the construction of the home (Marcoux, 2001). Third, furniture that responds to human age-related physiological changes, including the extent to which people can practically use furniture, has a great impact on elderly people’s independence and safety. These social, psychological, and physiological changes that accompany aging, along with prevailing attitudes to elderly people among younger generations, can be better understood by design research.

Aim and Research Questions

The purpose of this paper is to improve knowledge and awareness concerning the ways in which cognitively alert residents act on, are influenced by, reflect on, and appreciate furniture in nursing homes. The goal is to build greater understanding about the complexity of designing furniture for nursing homes and to improve the conditions for the design of furniture intended for elderly people and their housing forms with their own experiences as a point of departure. The sample consisted of 12 cognitively alert elderly nursing home residents and 9 nursing home personnel (i.e., municipal officials responsible for the planning and furnishing of nursing homes ($n = 2$), operations managers of nursing homes ($n = 4$), occupational therapists ($n = 2$), and a physical therapist ($n = 1$)). The study focuses on four main issues:

1. Elderly people with a lifelong experience of furniture are now experiencing physical constraints and for these reasons living in a nursing home planned and furnished partly by others, partly by themselves. To what extent does furniture contribute to a sense of “home”?
2. What kinds of meanings are attached to furniture at nursing homes?
3. What is the relationship of the furniture in the private and shared spaces?
4. What differences exist between the residents and the personnel perspectives?
The purposes of furniture range from instrumental use to sensorial, cognitive, emotional, and meaningful experiences.

Given the fact that the purpose of design is to support meaningful experiences, the goal is to increase knowledge of how design can improve nursing home environments and meet the needs of those who live and work there.

Method

From an industrial design perspective, which underlies the approach in this paper, furniture serves humans in the interplay between person, product, and the context where it is used. The benefit of relating contextual factors is that any reflection on a sense of home must begin in the everyday world, where people lead their lives. The purposes of furniture range from instrumental use to sensorial, cognitive, emotional, and meaningful experiences. According to Csikszentmihalyi and Rochberg-Halton (1981), furniture can represent the most significant objects in homes; they are viewed as special because they are symbols of the self and the family, particularly to elderly people.

Product Experience and a User-Centered Design Approach

The construct of product experience moves us from an analytical and distance-based expert view of characteristics and properties that a product can possess (aesthetics, originality, and functionality as the dominant qualities), to the role products play in people’s lives, which includes the need to understand people holistically (Jordan, 2000). The experience that results from interacting with a product is subjective and specific to each perceiver, and depends on personal factors (e.g., experiences, background, cultural values, one’s role, and motives), product-related factors (e.g., type of product, properties, and characteristics), and external factors (e.g., environmental, social, and economic context) (Warell, 2008). An experience can be shared with others and thus boosted or reduced. Experiences cannot be reduced to basic elements, but only exist as relations (Wright, McCarthy, & Meekison, 2004). Thus, pieces of furniture are understood as artifacts that in a situation may guide humans to operations, bodily and habitual behaviors, and experiences. As such, this approach has an important impact on the choice of research method that includes access to the furniture in its context and cognitively alert residents’ statements about their experiences. A reductionist approach is considered inappropriate to the study. The lack of knowledge about elderly people’s relationships to furniture means that there is no basis for hypothesis testing. However, there is a need for exploratory studies and a thorough content analysis. To fulfill these criteria, a qualitative approach was used with individual thematic interviews combined with a go-along approach (Carpiano, 2009) where the actual use of furniture could be observed and discussed within the nursing home environment. People and furniture in everyday situations are necessary to create an understanding about their relations. Observations alone, though, do not put people’s views in focus. Verbal and qualitative methods allow the participants to express what they perceive without being restricted to preconstructed categories. Interviews allow the interviewer to interpret the meaning of what is said and how it is said and ask follow-up questions to direct the conversation to cover both a factual and a meaning level (Kvale & Brinkmann, 2009). The purpose of the interview theme is to open up a conversation with the person being interviewed followed by a number of questions, some of them involving the interview person as a co-constructor (Aspers, 2011). To gain enriched knowledge about the experiences perceived, the interviews in this study included residents and personnel in their context, listening to their lived experiences, gaining insight into their views and understanding how they use, experience, and are affected by pieces of furniture.

Sample and Context

Twenty-one people participated in the study: 12 elderly residents, two municipal officials responsible for the planning and furnishing of nursing homes, four operation managers, that is, supervisors with operational responsibility for the nursing homes, two
The interviewee and the interviewer moved in the private room and between rooms in the shared spaces, which allowed asking situated questions and also observing and discussing interaction with furniture.

Table 1. Elderly participants (n = 12)

<table>
<thead>
<tr>
<th>Category</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender and age (years)</td>
<td></td>
</tr>
<tr>
<td>Females (78, 80, 87, 89, 92, 97, 98)</td>
<td>7 (58)</td>
</tr>
<tr>
<td>Males (85, 87, 88, 92, 98)</td>
<td>5 (42)</td>
</tr>
<tr>
<td>Period of residence (months)</td>
<td></td>
</tr>
<tr>
<td>Less than 1 year (1, 2, 5, 6, 8)</td>
<td>6 (50)</td>
</tr>
<tr>
<td>More than 1 year (14, 30, 30, 30, 34, 48)</td>
<td>6 (50)</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>1 (8)</td>
</tr>
<tr>
<td>Divorced</td>
<td>2 (17)</td>
</tr>
<tr>
<td>Widowed</td>
<td>9 (75)</td>
</tr>
<tr>
<td>Country of birth</td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>12 (100)</td>
</tr>
</tbody>
</table>

occupational therapists, and one physical therapist. Residents and personnel were recruited and scheduled for individual interviews through the managers. The residents—seven women and five men—ranged in age from 78 to 98 (Table 1). Inclusion criteria were that they were cognitively alert, able to verbalize their thoughts, and willing to share their experiences in an interview.

The interviews were carried out in three nursing homes in northern Stockholm. The purpose was not to compare locations but to get larger sample size and divergences in environmental-related factors. One facility was newly built, privately run, and had 27 apartments; the second facility was rebuilt 18 years ago, privately run, and had 83 apartments; and the third was built 25 years ago, run by the municipality, and had 40 apartments. The number of residents in each unit ranged from 6 to 10. The size of the residents’ private rooms ranged from 28 to 40 square meters (300–430 square feet). The rooms were unfurnished when the residents moved in with the exception of a mandatory, adjustable long-term care bed, and an optional nightstand. In the room, residents had access to a private toilet and shower but had no private kitchen. The shared spaces varied in size and type (e.g., kitchen, lounge, dining room, and lobby) among the three locations. The interviewer had an outsider’s perspective because he was unfamiliar with the environments and conditions in the nursing homes. The study was approved by the Regional Ethical Review Board in Lund, Sweden.

Interviews

The participants were explicitly asked as experts to share and teach the interviewer about the problems and pleasures of daily life in a nursing home, with the intent to put them in a privileged position. The interviews were audio recorded. The interviewer wore the microphone in a lanyard around the neck and stayed close to the interviewee. Field notes were taken.

Firstly, each participant was informed of the objectives of the study and the confidentiality of the results. Each participant had to consent to participate in the study before starting. The procedure with the residents started in their private rooms with a sit-down part of the interview.

The interviews started with five questions: (1) Which room means most to you? (2) What are you specifically pleased about in the nursing home? (3) Where do you prefer to sit? (4) Do you experience any problems with furniture and interiors? (5) Do you have any wishes for improved furniture and interiors? The purpose of these opening questions was to gauge the residents’ overall satisfaction.

Interviews with residents continued with a go-along method (Carpiano, 2009) to support close contact with the furniture and situations and elicit reflective aspects about experiences, interpretations, and practices. The interviewee and the interviewer moved in the private room and between rooms in the shared spaces, which allowed asking situated interview questions and also observing and discussing interaction with furniture. According to Carpiano (2009) “[...] the go-along is a unique tool for meeting the challenges posed within the health and place literature—as well as social sciences in general—regarding the need to examine how physical, social, and mental dimensions of place and space interact within and across time for individuals”
The results show a large variation in what people express about furniture in nursing homes, and reveal many diverse interests, needs, and wishes.

The results show a large variation in what people express about furniture in nursing homes, and reveal many diverse interests, needs, and wishes. The extracts from the transcribed texts were divided into 237 condensed meaning units that were then grouped into 39 codes, 10 subcategories, and the 4 categories: (1) fit usage, (2) fit human body, (3) suit the individual, and (4) fit the physical environment.

Results

The results clearly show that the relationships between the residents and pieces of furniture were perceived as meaningful. Major themes were that many residents want their private room to be experienced as their home in contrast to the shared spaces, and that the meaning attributed to furniture cannot be separated from earlier relationships between people and their furniture or the environments in which they exist. The results are presented in the subcategories that emerged in the analysis. Differences from the perspectives of cognitively alert residents versus personnel and private versus shared rooms are set against each other to reveal how diverse needs and wishes may conflict at times with each other.

The Instrumental Use

Descriptions where the aim was to achieve specified goals with effectiveness, efficiency, and satisfaction were grouped in the instrumental use subcategory.
Many residents what their private room to be experienced as their home in contrast to the shared spaces, and that the meaning attributed to furniture cannot be separated from earlier relationships between people and their furniture or the environments in which they existed.

### Table 2. Codes, subcategories, and categories in the content analysis (N = 237)

<table>
<thead>
<tr>
<th>Codes</th>
<th>Residents</th>
<th>Personnel</th>
<th>Subcategories</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Private rooms</td>
<td>Shared rooms</td>
<td>Private rooms</td>
<td>Shared rooms</td>
</tr>
<tr>
<td>Effective work environment (n = 5)</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Enable use (n = 8)</td>
<td>7</td>
<td>1</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>Enable portability (n = 12)</td>
<td>2</td>
<td>1</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>Enable egress of chair (n = 27)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Enable flexibility (n = 16)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
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<td>Improve safety (n = 6)</td>
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<td>3</td>
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<td>Enable order (n = 4)</td>
<td>3</td>
<td>1</td>
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</tr>
<tr>
<td>Make activity accessible (n = 2)</td>
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<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Enable social interaction (n = 8)</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Provide closeness (n = 2)</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>1</td>
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<tr>
<td>Withstand wear and tear (n = 10)</td>
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<td>1</td>
<td>10</td>
<td>2</td>
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<td>Withstand cleaning (n = 10)</td>
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<td>10</td>
<td>2</td>
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<td>Sitting comfort (n = 7)</td>
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<td>Leg comfort (n = 1)</td>
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<td>5</td>
<td>1</td>
<td>5</td>
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<td>Leg room (n = 2)</td>
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<td>5</td>
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<td>5</td>
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<tr>
<td>Fit body shape (n = 12)</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3</td>
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<td>Fit soft tissue (n = 6)</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3</td>
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<td>Sound comfort (n = 4)</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3</td>
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<td>Rest and movement (n = 4)</td>
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<td>2</td>
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<td>3</td>
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<td>Distinctive character (n = 2)</td>
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<td>1</td>
<td>4</td>
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<td>Reflect identity (n = 3)</td>
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<td>Visual expression (n = 6)</td>
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<td>Emotional bond (n = 7)</td>
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<td>2</td>
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<td>1</td>
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<tr>
<td>No emotional bond (n = 1)</td>
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<td>2</td>
<td>2</td>
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<tr>
<td>Memory of the past (n = 4)</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Memory of situation of life (n = 6)</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Heirloom (n = 3)</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Retain habits (n = 5)</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Sense of home (n = 12)</td>
<td>9</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Reduce and dispose (n = 4)</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>1</td>
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<tr>
<td>Avoid replacing furniture (n = 3)</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Management of human-furniture relationships (n = 1)</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Fit widest possible audience (n = 1)</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
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<td>Suitable product expression (n = 3)</td>
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<td>Suitable product colors (n = 1)</td>
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<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Suitable interior expression (n = 10)</td>
<td>6</td>
<td>3</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Fit housing size (n = 9)</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Fit the furnishability of interiors (n = 5)</td>
<td>3</td>
<td>2</td>
<td>2</td>
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</tr>
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</table>
Many of the residents described that they spend most of their time sitting or lying in their private rooms. They appreciated chairs that enabled egress (i.e., easy to get up from). Some descriptions concerned difficulties reaching high and low: “I would like to reach the clothes myself, but I have fallen several times,” was a comment that indicated wishes for self-esteem and greater independence. Factors related to cognitive processing were an increased need for furniture with simple and intuitive usage and furniture that enabled order so that every possession could have its predetermined place within a relatively small living area.

Examples of positive comments from residents about the instrumental use of furniture in the shared rooms were: “[…] needs are satisfied; it is nice and neat.” Pieces of furniture that were easily moved, that provided portability and enhanced self-determination were preferred: “[…] so you can use them where you want to sit.” Changes in eyesight were an often stated cause of trouble because they prevented individuals from performing meaningful activities. Comments such as: “It’s no fun getting old and sitting like this,” “It’s very hard to come up with things to do,” and “The worst is that I cannot do anything because of my eyes,” indicate an increased need for a physical environment that makes activities accessible and promotes pleasure and stimulation of all the senses with lighting and support of visual perception being especially important for those with limited mobility.

A significant difference from the perspective of cognitively alert residents versus personnel was that the personnel described an efficient working environment. The objectives stated were to minimize the residents’ need for help from the personnel, which also benefited the residents by maintaining their integrity and providing them with fitness and muscle training. It was also considered important that the furniture provided flexibility, adjustability, and portability so that it could satisfy different needs and provide an effective work environment so that the personnel could easily work with furniture and situations to help the residents. From the perspective of personnel, they preferred furniture in the shared rooms that was simple and intuitive to enable use as well as to be stimulating for the residents. According to the residents, the factor most described was enable egress of chairs. Occupational and physical therapists often reported furniture-related problems that occurred during meals. Dining chairs with castors were often appreciated (Figure 1). Apart from facilitating residents in rising from the table, these chairs can also be used to transport residents to their rooms in case of a sudden fall in blood pressure, for example. The personnel expressed wishes for solutions that provided flexibility for dining rooms due to people’s diverse needs for space (e.g., wheelchairs, assistance when eating, different body sizes) and social aspects (e.g., age-related cognitive and psychological changes, the issue of who can sit next to whom for an enjoyable mealtime). Particular negative properties mentioned were chairs and sofas that were too soft with seats that were too low and deep to provide egress, pieces of furniture that were either too light and unstable to improve safety (Figure 2), or too heavy and bulky to provide flexibility (Figure 3), which made it difficult to move when clearing the floor for activities such as light exercise classes.

Social Use

Descriptions about how furniture can impact relations to other people were grouped in the social use subcategory.

Some residents reported that certain pieces of furniture in their private rooms were only meant to accommodate significant others such as family or guests: “Visitors usually use the couch. […] I do not want to sit there because I cannot get up.”

Many residents described the pleasures of being outside on the balcony, terrace, or in the surroundings in the shared spaces (Figure 2). They stated that being outdoors enhanced social interaction. Some of the residents described how furniture could affect relations to other people: “Couches symbolize and affect a lot [e.g., relationships between people, social interaction, and level of formality], this closeness...
Occupational and physical therapists often reported furniture-related problems that occurred during meals.

Durability and Maintainability

Descriptions of furniture’s resistance, durability, and maintainability were grouped in the durability and maintenance subcategory.

The residents did not mention the aspects durability and maintainability but the personnel often did. Descriptions include that furniture should be able to withstand tough wear, tear, and cleaning such as moving back and forth, collisions with walkers and wheelchairs, incontinence, disinfection, and repeated removal reupholstering, and cleaning of furniture fabrics. From the managers’ perspective, it was important that the maintenance was not too expensive or complicated. In some cases, observations showed neglected maintenance, incorrectly mounted, unstable, and broken furniture, which could pose a safety risk.

Physical Comfort

The subcategory physical comfort included descriptions of what is considered comfortable and relaxing for the human body.

An aspect stated by the residents was the increased need for more rest. Sitting comfort was important...
Physical comfort was a major aspect stated by the residents in the shared rooms. Chairs with dimensions that did not fit the body shape where a major problem.

Figure 3. Living room used as a dining room on holidays and for singing, crafts, and light exercise classes. The chairs and tables were too heavy and bulky for both personnel and residents to move. Relatively poor maintenance was reflected by the instances of damaged furniture and squeaky castors.

Figure 4. Chairs located in places close to the outdoor environment were appreciated. This hall was draughty and cold in some seasons. Adding pillows to meet physical needs was more the rule than the exception.

for many of the residents in the private rooms. It included the need for footstools, headrests, neck support, and soft seat pans. “I can now feel the bones in my butt [when sitting],” was a candid and illuminating comment about reduced tolerance of surface pressure due to age-related changes in body composition.

Physical comfort was a major aspect stated by the residents in the shared rooms. Chairs with dimensions that did not fit the body shape were a major problem. Observations showed that pillows were frequently added to chairs for higher or softer seating or to provide support for the lumbar region (Figures 1 and 4). One aspect stated by the residents was the increased need for sound comfort because of greater vulnerability to loud noises: “The castors on the dining chairs make a loud noise when you get up from the chair and push it.”

According to the personnel, pieces of furniture had particular positive properties when they provided physical comfort. They reported that it was particularly difficult to find appropriate solutions for short women and people who are overweight or obese because current chairs only have dimensions that fit the average person. Footstools in front of dining chairs were used to give support for shorter women, but were an inefficient solution because they were time consuming for the personnel (Figure 1). It emerged in an interview that a physical therapist on one occasion realized that the only solution was to cut off the legs of a dining chair. Personnel positively described furniture that was noise absorbing for improved sound comfort. A municipal official
The residents’ descriptions suggested awareness about the origin, history, and workmanship of the furniture.

described a difference between the private and shared rooms: The intention in the former was to create a peaceful environment with white and beige colors and in the latter to energize the residents and make them alert with clear, more saturated colors and contrasts.

**Individuality**

Descriptions about furniture that was perceived as unique, distinctive, and individual were grouped in the **individuality** subcategory.

A comment that describes how furniture reflected identity was: “I have chosen the pieces of furniture myself, so they’re a part of me so to say, a part of my life, my past life.” Individual and unique pieces of furniture were a source of delight and may affect the residents so they become more themselves. The private rooms that provided favorable conditions to make the room suit the residents’ self-identity and living habits were appreciated. Only descriptions from residents in their private rooms were grouped in this subcategory.

**Appearance**

Descriptions about beauty, preference, and visual perception were grouped in the **appearance** subcategory.

One of the few statements from the residents in this subcategory was a description of a beautiful wooden tabletop.

The only comment on the appearance of furniture in the shared rooms described heavy and clumsy furniture. However, the appearances of the interiors were often negatively described, for example: “mostly boring corridors,” and “uninviting.”

The personnel wanted attractive furniture in contrasting and bright colors with an obvious purpose. Some of the descriptions from the municipal officials also concerned the need for an attractive physical environment to attract employees and encourage them to stay.

**Shared History**

Descriptions of how shared histories have a strengthening effect on emotional bonds were grouped in the **shared history** subcategory.

The residents often described pieces of furniture that evoked memories. These included memories that had to do with childhood, upbringing, and traditions. The residents’ descriptions suggest increased awareness about the origin, history, and workmanship of the furniture, for example: “The fact that it is worn gives it a charm; it has a patina. Yes, I can feel that this piece of furniture has been around since I was a child.”

Private furniture in their own rooms meant much for the residents: “It is necessary to feel at home,” and “The little [possessions] one has left out of a whole life.” Statements about what made it significant were, for example: “I have my everyday objects here; things that I know from the past,” and “I wish that parts of my identity will be in the atmosphere.” According to the resident sample, relationships strengthened by a shared history allowed them a sense of being at home, and thus a more habitable environment. The argument most stated about positive product properties of furniture from residents in the private rooms was that it was brought from the individual's former home. This continuity results in the comforts of home, memories, and preserved routines, dreams of social interaction, security, bodily and habitual activities, dignity, meaning, and pleasure. How furniture was important as heirlooms was complex for participants to describe and dependent on the individual’s background and history: “The fact they belonged to a family for several hundred years means something.” Some residents described how private furniture supported the retaining of habits and contributed to recognition and feelings of familiarity: “I’m glad I have my old furniture that I am familiar with.”

Residents reported that the shared rooms did not provide a sense of home, for example: “[...] gives the spirit of togetherness, but not a feeling of a home, simply because it’s not my home; I haven’t arranged it myself.”

The personnel viewed the furniture from a practical view and did not perceive it in the same way as the
The personnel viewed the furniture from a practical view and did not perceive it in the same way as the residents.

Residents. The personnel reported that private furniture accounted for emotional bonds, recognition, and safety and was considered to be important for the resident’s life course while it was often a source of grief too.

Values and Opinions
The opinions subcategory includes descriptions of personal values, what was right or wrong to do, what was the ideal, how to think and act. Some residents stated that they avoided replacing furniture, both to refrain from disposing of old furniture and acquiring new. One resident emphasized the importance of having furniture that suits the kind of life one leads at the moment. This was coded as management of human–furniture relationships. An occupational therapist also reported that many residents and family members avoided replacing furniture in the private rooms; they did not install appropriate seating furniture because they felt that they already had many chairs.

Relationship to Other Furniture
The relationship to other furniture subcategory includes descriptions of how a piece of furniture fits in with the other pieces of furniture in terms of balance and atmosphere.

From the residents’ perspective, furniture was suitable for the private rooms if it contributed to a coherent interior and fit in with both old and new furniture.

According to the managers, when a need for new furniture arose in the shared rooms, they looked for pieces that fit in with the initial set of interior products. Replacement decisions were made, for example, because of the need for improved flexibility or the fact that existing furniture was worn out or broken.

Relationship to Interior Space
Descriptions of how furniture fit the interior’s size, furnishability, and desirable appearance were grouped in the relationship to interior subcategory.

Many residents felt that their private rooms were over-furnished and wanted a larger space, but also because they wanted to bring belongings such as furniture that they now missed. However, several of the participants were contented and accepted the circumstances. The private rooms were sometimes negatively described by the residents as “limited” and “vacuous”, which indicates an experience of being inhibited in a constrained space. Consequently, residents wished for small and light furniture.

From a workplace environment perspective, the personnel felt that it was too cramped for them in many private rooms. They described that the need for more space in the shared rooms becomes increasingly important over time, because residents are frailer today and use bulky assistive devices such as wheelchairs. Unlike residents, the personnel provided many descriptions of suitable interiors for the shared rooms. Well thought-out interiors were described as cozy and attractive. This could be achieved with colors and patterned furniture fabrics. A homelike appearance in the shared rooms was preferred to encourage a sense of home for the residents. Descriptions of furniture-related factors with homelike characteristics included an old style and wood as a material. Institutional environments with neutralized, single hue interiors without contrasts and natural lacquered wood furniture were not desirable.

Discussion
This explorative study increases our understanding of the relationships between people and furniture in nursing homes. The results show a wide variation in these relations. Nevertheless, there are aspects that unite, such as the aspirations for independence, mobility, and comfort for elderly people, noninstitutional and stimulating environments, and enhanced social interaction among residents, their family members, and personnel. In addition, the majority of the cognitively alert residents sought a sense of home in their private rooms and the personnel wanted an effective workplace. The municipal officials stated that it is an important issue and a complex task to
design nursing homes because there are many aspects to take into account. It has to be an effective and attractive workplace for personnel as well as a home that provides comfort and ease for the residents. In addition, the physical environments are important for residents’ family members; they use the facilities as visitors and they are usually the ones that install and maintain the furniture in the private rooms. To capture this in a suitable combination at a reasonable cost was considered a major challenge. Based on the results from the content analysis, Figure 5 shows the percentages of condensed meaning units in the categories, **fit usage**, **fit human body**, **suit the individual**, and **fit physical environment**. All categories are important for the perceived experience of furniture. From the residents’ perspective, the dominating category in the private rooms was **suit the individual**, and in the shared rooms **fit usage** and **fit human body**. Among the descriptions from personnel, **fit usage** was the dominant category in both private and shared rooms.

The results clearly show that elderly people have significant relations to furniture. Depending on previous experiences and expectations, though, the furniture was not perceived and valued in the same way by all. This shows that they are individuals with unique lives, backgrounds, traditions, and other criteria. Subjective interpretations, intangible, or seemingly small features can be perceived as particularly meaningful to the elderly participants in this study.

**Comparisons between Private and Shared Rooms**

The furniture that the residents bring to a nursing home has an impact on their perceived comfort and sense of being at home, and informs the personnel about their background. Pieces of furniture and their arrangement in the private rooms serve as cues that help their owners retain their unique self-identity, dignity, history, and living habits as long as possible. Having their private furniture is perceived by the residents as being meaningful from social and existential points of view. The display of their furniture that is consistent with how the residents perceive themselves allows them to express some personal identity and family history. In many cases, elderly people’s aspirations to secure social and existential identity and continuity outweigh the instrumental use of furniture in their rooms. The installation of private furniture may contribute to the creation of a desired individual space. Privacy is one characteristic that supports

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*Figure 5. Percentage of condensed meaning units about how furniture can be significant in the four categories.*
A lesson learned is that furniture in the shared rooms is perceived differently by the residents than those in the private rooms.

feelings of comfort and well-being. Private furniture brought to the nursing home may have similar product-related factors (type of product, properties, and characteristics) as shared furniture, but be perceived as essentially different due to personal factors (past experiences and motives) and external factors (environmental and social context) (Figures 6 and 7). Factors, such as personal relations, sensorial or aesthetic experience, cognitive experience, or practical use have different meanings in different contexts.

The lessons learned are that furniture in the shared rooms is perceived differently by the residents than those in the private rooms. Residents do not experience the shared spaces as their home and express no desire that they should be. They understand and accept that they do not feel at home in the shared spaces because there are so many people using these spaces together. The residents clearly perceive the border between the private (the private sphere) and the shared (places for social interaction, personnel, and outdoor environment). The border is not as clear for the personnel who have another perspective, since the entire facility is their working environment. Andersson (2011) emphasizes the importance of harmonization of compact private rooms and a shared space to create a supportive environment for elderly residents and provide a suitable working environment for the personnel. Harmonization may involve contrasting and balancing situations, since the older participants wish to perceive the difference between the private and shared rooms. However, the fact that many residents feel that their private rooms are constrained and

Figure 6. Interior of a private room with similar products as in Figure 7. Family members redecorated the room three times to help achieve a sense of home.

Figure 7. Interior of a shared room with products similar to those in Figure 6. One individual may experience the same type of chair completely differently due to external factors; in this case, the context of one’s own private room compared to that of a shared room in a nursing home.
Harmonization may involve contrasting and balancing situations, since the older adults wish to perceive the difference between the private and shared rooms.

Chair-related factors that both residents and personnel often described were the enabling of easy egress and fit to the users’ body shape. The fact that residents often mentioned the increased need for physical comfort shows the needs for greater emphasis on sitting comfort and sound comfort, which may also encourage the residents to spend more time in the shared rooms. Lessons learned about suitable interior appearance and variations are in line with Dickinson (2004): Variety and complexity can be used to avoid connotations of institutional settings. Desirable pieces of furniture for shared rooms are those that are perceived as comfortable, inviting, stimulating, obtained for elderly people and able to enhance social interaction among residents, their family members, and personnel. Regarding stimulation, Evans and McCoy (1998) recommend moderate levels: “Lack of stimulation can lead to boredom or, if extreme, sensory deprivation […] Too much causes distraction and overload which interfere with cognitive processes that demand effort or concentration” (p. 86). The lessons learned are in line with Evans and McCoy: Portable furniture, comfortable interpersonal distances, and physical comfort can be used to encourage social interaction.

Comparisons between the Perspectives of Residents and Personnel

The personnel do not fully understand the meaning that elderly people ascribe to pieces of furniture or the challenges they face when using them. Not surprisingly, the personnel have other perspectives than the residents and different types of criteria. They have a more utilitarian point of view: Furniture has to serve the purpose of an effective and attractive workplace. Both the elderly and personnel participants were aware of these differences in their perspectives on furniture, but had not carefully reflected on how the physical environment can resolve contradictions. The residents’ wanting to have dignity and a sense of being at home in private rooms may contradict the personnel’s needs of an effective workplace. The personnel’s more utilitarian point of view of furniture—that it should be efficient, fulfill work environment requirements, and be obvious and instructive—may contradict the residents’ needs for furniture that provides training for fitness and muscles, conveys positive reactions, is interpreted as being comfortable, and encourages residents to stay longer periods in the shared rooms, thus encouraging social interaction.

Methodological Limitations

The qualitative approach supported the exploratory nature of the study and avoided a solely material-focused or mechanic view of furniture and the relationships between elderly users and the furniture artifacts as merely functional. Limitations to the study include that elderly participants avoided talking about negative aspects and their own inabilities. Possible explanations may be that they were in a dependent situation or that the current generation of elderly people has modest expectations (O’Leary, 1992). It was easier for the personnel to answer whether they thought that any piece of furniture had a particular negative property. A problem with studying everyday life in these environments is the researcher’s presence that impacts the atmospheres in the private rooms as well as shared spaces. The advantage is that the validity can be considered as high since the study was conducted in the participants’ daily lives where they developed their relationship with furniture. The differences in approach and questions between residents and personnel may have affected the results of the comparisons. The inclusion criterion did not cover all categories of residents and several of the participants reported that they felt significantly healthier than the rest of the residents. This means that the lessons learned cannot be generalized to the arguably increasing share of residents in nursing homes with dementia. Elderly people with Alzheimer’s disease, for example, suffer from disturbed spatial perception and disorientation. It is likely that cognitively
The relevance for raising questions from the perspective of elderly peoples’ needs and wishes versus facilities operational needs has great implications for the complex practice of interior and furniture design where diverse user needs often are in conflict.

Implications for the Design of Furniture

This paper contributes to the design field through increased knowledge of elderly people’s relations to furniture and their perceived experiences when they live with and use furniture in nursing homes. The intent is not to simplify the challenge but rather to provide a deep understanding about the complexity and the many issues and aspects to take into account when designing furniture intended for nursing homes.

Lessons learned are that furniture for the private rooms should reflect the identity of the individual living there. The private rooms should provide the residents greater opportunity and space to put their own individual touch to the room, allow for maximum comfort, self-esteem, dignity, familiarity, and security and to avoid conditions that restrict their living space. These lessons are in line with Eshelman and Evans (2002), who suggest that true satisfaction occurs when the private rooms in nursing homes reflect the personality of the individual resident. They also point out the importance of appropriate spatial proportions and spatial configurations of space that enable the residents’ private furniture to appear to belong in contrast to appear out of place and therefore strange.

The design of furniture for shared rooms should not be based on others’ presumptions or stereotypes of aging, but should start from elderly people’s wishes for comfort and pleasure. Comfort and pleasure are not the same as homelike. Contrasting effects may be sought to promote a sense of being at home in the private rooms and meet the needs of clarity and variation in the shared rooms. Furniture that, from the residents’ perspective, gives a room a coherent, harmonious, and pleasant atmosphere is more likely to be perceived as inviting and can serve to make both daily existence and the entire stay in the nursing home more pleasant. Furniture with surfaces and details that invite the sense of touch may support and enrich the many residents who suffer from reduced eyesight.

Since the expressed desires and joys of being outside were overwhelming, outdoor furniture that is stable, but not too bulky so that it includes use by elderly people is regarded as an example of a product type where there are unmet demands. The study revealed needs for solutions that are adaptable to individuals and environments. Designers should determine what flexible and adjustable solutions are preferred and offer choices for a wide range of individuals and different needs such as physical comfort and independence. If not, poor design solutions, such as inflexible and nonadjustable furniture, may discourage social interaction, hinder elderly people’s actions, or result in the need for help being built in and not reflected on. If designers become involved and knowledgeable about what residents and personnel are striving to accomplish, they can use their ability to visualize new proposals, and thus successfully design solutions that support health and well-being. In the long-term perspective, interior designers should be counted upon when environments for elderly people are planned. Industrial designers also have an important role in contributing to knowledge and understanding about the complexity and uniqueness of these environments and the development of a wide range of products for interior designers and facilities managers to procure.

The relevance for raising questions from the perspective of elderly people’s needs and wishes versus facilities operational needs goes beyond eldercare facilities and has great implications for the complex practice of interior and furniture design where diverse user needs often are in conflict.
Conclusions
This paper shows how designers can help enhance care environments. If not, poor design solutions together with low expectations among users in nursing homes may result in unnecessary and time-consuming needs being built into the existing situation. That is why it is important to elicit hidden or latent needs so that aspirations can be met and unwanted experiences can be avoided. This paper proves that the beneficial experiences encompass needs for continuity, social, and existential safety that sometimes go far beyond instrumental use and physical constraints. A recommendation for further work is to involve both personnel and the elderly people themselves in design and procurement processes concerning furniture for nursing homes.

References


Notes
1 All photographs were taken by Oskar Jonsson.

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